

REMARKS

The application has been amended to place it in condition for allowance at the time of the next Official Action.

Claims status

Claims 1-13, 15 and 16 are pending in the application.

Claim objection

Claim 2 is amended as suggested in the Official Action to address the claim objection.

35 USC 103 rejection

WO '644 and WO '398

Claims 1-12, 15 and 16 were rejected under 35 USC 103(a) as being unpatentable over WO 02/079644 in view of WO 01/57398 (US Publication No. 2003/0123984). That rejection is respectfully traversed.

As recognized in the Official Action, WO '644 does not disclose taper roller bearing with a bogie plate. WO '398 is offered for taper roller bearings, with the Official Action concluding that it would have been obvious to replace the bearings of WO '644 with the taper roller bearings of WO '398 to better distribute contact pressure on the rollers.

However, although taper roller bearings (TRBs) are known *per se* and appear to provide the advantages noted in

paragraphs [0023] to [0029] of WO '398, nevertheless, such advantages are compared to cylindrical bearings of a stud (compare Figures 2a and 3 of WO '398) for a gear unit that does not include a bogie plate.

By contrast, claim 1 of the present application is directed to a planet bogie plate that provides support for circumferentially spaced shafts, which support and locate circumferentially spaced planet gear bearings.

Thus, in the present invention, there is not only a bogie plate, but also a bogie plate that supports the shafts, which in turn support the taper roller bearings.

It was not known to use such TRBs as part of a gear transmission unit having a planet bogie plate, wherein the planet bogie plate provides support for circumferentially spaced shafts, which support and locate circumferentially spaced planet gear bearings (at least some of which are TRBS) on which planet gears are mounted as recited in claim 1.

That is, the recited bogie plate as represented, for example, in figure 4 of the present application has a completely different configuration than the gear system of WO '398.

Based on these differences, one of ordinary skill in the art would not have considered the proposed substitution in the first instance.

Moreover, the proposed substitution is contrary to the understandings and expectations of the art.

As previously argued, one of ordinary skill in the art did not consider TRBs in combination with a bogie plate because one loses degrees of freedom and moreover, it was unexpectedly found that not having the added degrees of freedom of the planets on SRBs could at least partly be compensated by using the self-adjusting characteristics of the TRBs.

The declaration under Rule 132 submitted on November 9, 2009 fully supports this position and points out that the recited bogie plate combined with TRBs was never proposed before and it was believed not to be workable at the time of filing based on a lack of degree of freedom.

See page 4, lines 4 and 5 of the declaration wherein reference is made explicitly to prior art document WO 02/079644, page 2, lines 14-21, wherein double spherical roller bearings are proposed, "the rollers of which can run in a common spherical track in an outer race of the bearing".

The reason is that:

"As a result, particularly good possibilities are obtained of both planetary wheels of each set of planetary wheels being able to carry out very weak lateral inclinations in such a manner that it is ensured that the stresses transferred through the teeth of the planetary wheels are always uniformly distributed across the entire tooth width."

One of ordinary skill in the art would understand that these noted passages relate to degrees of freedom and that at the

time of filing the present application, it was believed that a certain minimum degree of freedom was required in order to have a suitable (uniform) load distribution.

That is, in order to have a working device, it is necessary to carefully calculate the design and to take all different parameters into account, such as the degrees of freedom of movement of mechanical parts with respect to one another.

Applicant's position is that the cited prior art documents do not provide arguments (or teachings) which make it obvious to choose a taper roller type of bearing for supporting planet gears on a planet carrier with a bogie plate.

On the contrary, as demonstrated above, the reasoning disclosed in WO '644, page 2, lines 14-21 points away from such a choice, since it is clearly disclosed that a double spherical roller type of bearing should be used in order to have good load distribution across the entire gear tooth width. Indeed, the accepted understanding in the art was that SRB's are preferred over TRB's for supporting planet gears on a bogie plate.

Thus, contrary to the position set forth in the Official Action, evidence was provided by the declaration under Rule 132 that supports applicant's position that according to the prior art, SRB's are preferred over TRB's for supporting planet gears on a bogie plate (explicit use of SRB's, when TRB's were known *per se*).

Accordingly, the submitted declaration together with the above-noted comments are believed sufficient to traverse the rejection and to support the position that it would not have been obvious to one of ordinary skill in the art to combine the references in the manner suggested.

Accordingly, the present claims are believed to be patentable over WO '644 in view of WO '398.

It appears that the Official Action continues to pursue the untenable position that it would have been obvious to use TRB's for supporting planet gears on a bogie plate.

However, for the reasons set forth above there is no basis for this conclusion.

Rather, it appears that the reasoning behind the conclusion is reasoning similar to the known sophistic example:

"1) My body fits in my suit;

2) My suit fits in the suitcase;

3) Conclusion: It is obvious that my body fits in the suit-case."

In this sophistic example it is very clear that the reasoning is false, since the conditions in which the suit is used are different, when somebody is wearing it or when it is folded for being stored in a suit-case.

This would be very clear if the preceding reasoning was written as follows:

"1) My body fits in my suit if the suit is in the unfolded condition;

2) My suit fits in the suitcase if it is in the folded condition;

3) The conclusion would be: Whether or not my body fits in the suit-case cannot be known based on these premises.

Similarly, the reasoning in the Official Action is as follows:

"1) The gear transmission unit of WO '644 is a planetary type gear transmission in which the planet gears are supported by double spherical bearings,

2) From WO '398 it is known that a taper roller bearing can be used for supporting the planet gears of a planetary gear system,

3) Conclusion: it is obvious that the planet gears of WO '644 could also be supported by taper roller bearings,"

If, in a similar way as with the corrected sophistic reasoning, all conditions of the reasoning were taken into consideration, the examiner would not come to the same conclusion.

Indeed:

"1), The gear transmission unit of WO '644 is a planetary type gear transmission with a bogie plate which supposedly needs a certain degree of freedom on the planet bearings provided by double SRB's,

2) From WO '398 it is known that a taper roller bearing can be used for supporting the planet gears of a planetary gear system with a classic type planet carrier without bogie plate,

3) Conclusion: Based on these premises, it is not obvious that a taper roller bearing which does not provide the same degree of freedom as a double SRB can be used for supporting the planet gears in a planetary gear unit with bogie plate."

To conclude, the examiner makes a conclusion by simple similarities, which is not done according to standard engineering practices and which is not a proper basis for making an obviousness rejection under the meaning of 35 USC 103. Thus, the obviousness of the present claims in respect of the cited prior art is not demonstrated.

Arguments as to claim 5

Claim 5 depends from claim 1 and is believed to be patentable for depending from an allowable independent claim.

In addition, claim 5 is believed to be independently patentable. Claim 5 recites that each planet gear of such a pair of planet gears is supported by a pair of taper roller bearings.

The official Action states that in WO '644 the planet gears of each pair of planet gears is supported by its own separate bearing 17a or 17b. Thus, as recognized in the official Action, each gear of WO '644 is supported by a single bearing and not by a pair of bearings as required by claim 5.

Furthermore, the bearing which supports a planet gear in WO '644 is of the double spherical roller bearing type and not of the taper roller bearing type.

Accordingly, claim 5 is believed to be independently patentable.

WO '690 and WO '398

Claims 1-13, 15 and 16 were rejected under 35 USC 103(a) as being unpatentable over WO 02/14690 in view of WO 01/57398 (US Publication No. 2003/0123984). That rejection is respectfully traversed.

Similar to the rejection over WO '644 in view of WO '398, the Official Action recognizes that WO '690 does not disclose taper roller bearing. WO '398 is again offered for this feature.

However, for the reasons set forth above and in view of the 132 declaration, the proposed combination of references is improper not only because the proposed combination is contrary to the accepted teachings at the time the present invention was made, but also because the proposed combination would not have been considered based on the differences in structure of the two references, and because the proposed combination does not suggest TRBs as part of a gear transmission unit having a planet bogie plate, wherein the planet bogie plate provides support for circumferentially spaced shafts, which support and locate

circumferentially spaced planet gear bearings (at least some of which are TRBS).

In view of this, it would not have been obvious to one of ordinary skill in the art to combine the references in the manner suggested. Accordingly, the present claims are believed to be patentable over WO '690 in view of WO '398.

WO '566 and WO '398

Claims 1-13, 15 and 16 were rejected under 35 USC 103(a) as being unpatentable over WO 03/014566 in view of WO 01/57398 (US Publication No. 2003/0123984). That rejection is respectfully traversed.

Again as in the rejection over WO '644 in view of WO '398, the Official Action recognizes that WO '566 does not disclose taper roller bearing. WO '398 is again offered for this feature.

However, for the reasons set forth above and in view of the 132 declaration, the proposed combination of references is improper not only because the proposed combination is contrary to the accepted teachings at the time the present invention was made, but also because the proposed combination would not have been considered based on the differences in structure of the two references, and because the proposed combination does not suggest TRBs as part of a gear transmission unit having a planet bogie plate, wherein the planet bogie plate provides support for

circumferentially spaced shafts, which support and locate circumferentially spaced planet gear bearings (at least some of which are TRBS).

In view of this, it would not have been obvious to one of ordinary skill in the art to combine the references in the manner suggested. Accordingly, the present claims are believed to be patentable over WO '566 in view of WO '398.

WO '644 and WO '398 and WO '690 and WO '566

Claim 13 was rejected under 35 USC 103(a) as being unpatentable over WO '644 in view in view of WO '398 and further in view of WO '690 and WO '566. That rejection is respectfully traversed.

Claim 13 depends from claim 1 and is believed patentable over the proposed combination of references at least for depending from an allowable independent claim.

Double patenting rejection

Claims 1, 4 and 5 were provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1 and 13 of co-pending application No. 12/335898 in view of WO '566, WO '690 and WO '644.

A terminal disclaimer signed by an attorney of record is submitted herewith that is believed to obviate this rejection.

In view of the previously submitted 132 declaration, the present amendment and the foregoing Remarks, the present application is believed to be in condition for allowance. Reconsideration and allowance are respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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APPENDIX:

The following item is included in the appendix:

- a terminal disclaimer